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The Effect of Cigarette Smoke on Lung Metabolism.

Progress Report

1. Lungs from rats exposed to tobacco smoke for five days in the Walton Machine were removed, perfused and ventilated at different rates. Smoked lungs did not increase the incorporation of ^{14}C palmitare with increasing ventilation and became edematous, contrary to controls.

2. Lung slices from rats exposed to tobacco smoke for 30 days showed a 30% decrease in protein synthesis and 100% increase in glycoprotein synthesis.

3. Human lung slices from surgical material ("normal" areas) showed little variation in metabolic activity, regardless of smoking history. However, the metabolic activity of human lung is significantly lower than of the rat.

Current Plans

Further studies on the effect of short-term exposure (less than 5 days) on lung composition and metabolic activity in the rat are in progress.

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